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ROP station-tested ram lamb gets trimmed for sale. See story on page 5.

Les jeunes béliers ayant subi des épreuves de contrôle d'aptitudes en station sont préparés pour la vente. Voir l'article en traitant à la page 5.

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SOIL SURVEYS FOR LAND-USE POLICY IN THE NORTH

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H. P. W. ROSTAD and
L. M. KOZAK

L'Institut de recherches sur les ressources du territoire du ministère de l'Agriculture du Canada vient de terminer une série d'études des sols au Yukon et dans les Territoires du Nord-Ouest qui serviront de base pour la planification et l'aménagement des terres par le ministère des Affaires indiennes et du Nord.

The Land Resource Research Institute (LRRI) of the Research Branch of Agriculture Canada has completed a series of soil surveys in the Yukon and Northwest Territories. These surveys are intended to serve as a basis for land-use planning and land management by the Department of Indian and Northern Affairs (DINA).

Land management offices of DINA in Whitehorse and Yellowknife had been receiving applications for agricultural leases for land throughout the north. Early soil surveys and experimental farm research provided the basic information on land quality to facilitate decisions on some of these applications. More often than not, however, there was no information on the land in question. Added to this was a lack of general policy, or guidelines, on disposition of land suitable for agriculture in the north.

Under these circumstances, it was not surprising for the DINA minister of the day, Judd Buchanan, to approve a temporary suspension of the disposition of federal crown land for agricultural use in both territories. His explanation cited the need to develop long-term policies for agricultural development and to evaluate the soil and climatic resources as a basis for policy development and implementation.

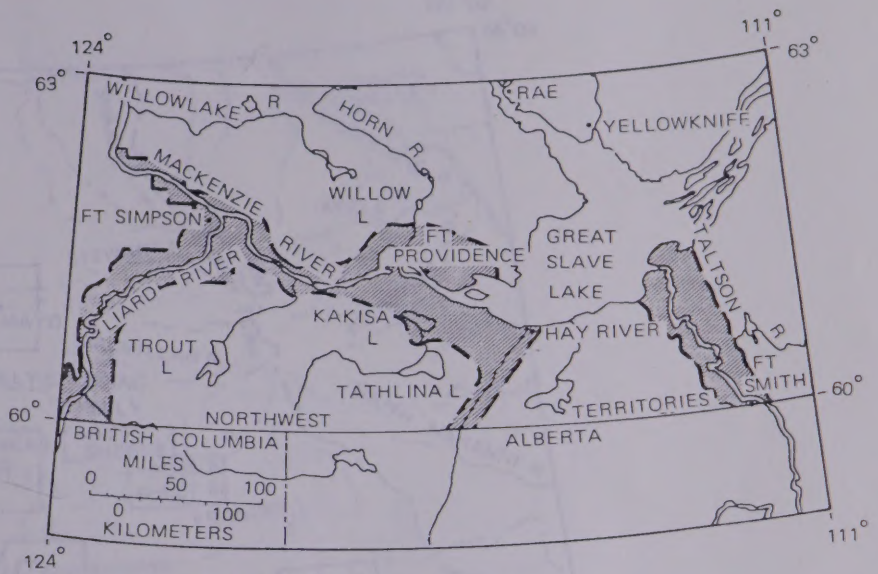

Figure 1. Index map of the southern portion of the Northwest Territories indicating areas studied. The portion along the Liard River was surveyed in 1975.

The soil surveys were conducted by the Saskatchewan Institute of Pedology under contract to Agriculture Canada, with major financial support from the requesting department, DINA. Staff of the Beaverlodge Research Station assisted in ecological interpretations.

The surveys began in 1975 in a 1.2 million ha area extending northward along the Liard River from the 60th parallel to Ft. Simpson and along the MacKenzie River from Ft. Simpson to approximately 62° (Fig. 1). The area was covered with muskeg and forest, some of it of commercial capability near the southern limit. Perennially frozen soils were encountered in northern portions of the area. A comprehensive report describes these soils and the agricultural potential of the region. Maps depicting soils and topography, agricultural capability, forest cover, soil materials and drainage, and the relative suitability for farming operations augment the descriptive material.

The following year, 10 areas of the Yukon considered to have some capability for agriculture were selected for a field survey. These areas (Fig. 2) were restricted to the floodplains and terraces of the major river valleys and upland regions below 1000 m a.s.l. Such areas encompass the most climatically and topographically suitable areas for agriculture in the region. The soils are virtually all forested, the exception being the wet portions of floodplains where marshes and meadows prevail.

Once again, a comprehensive report documented the soils, the agri-

H. P. W. Rostad and L. M. Kozak are members of Agriculture Canada's Land Resource Research Institute, Soil Survey Unit, at Saskatoon, Sask.

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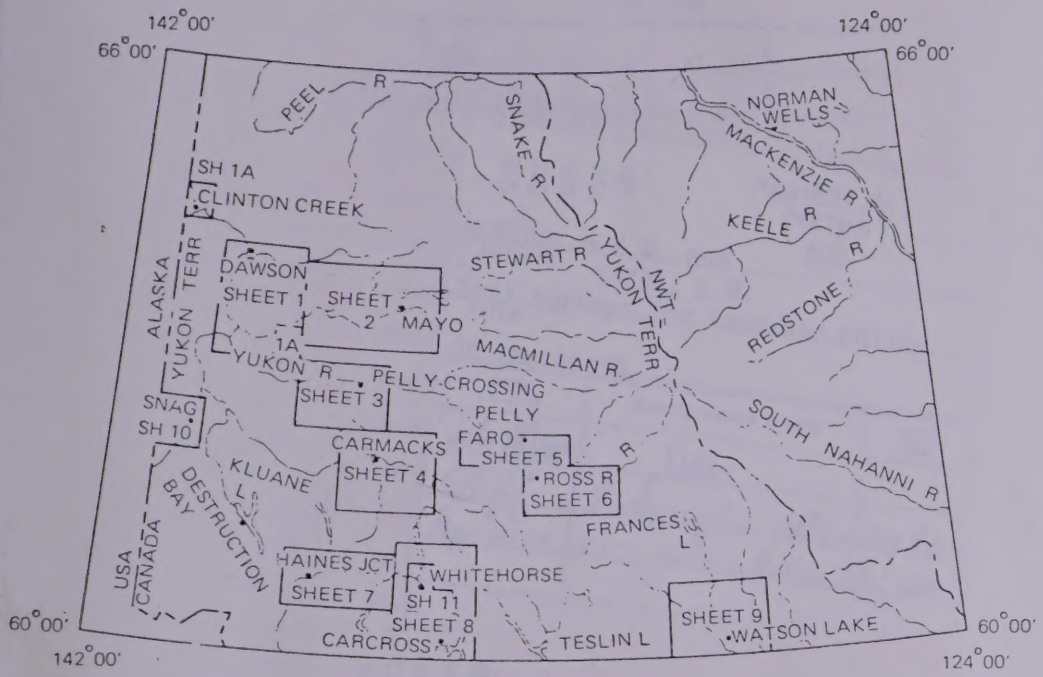


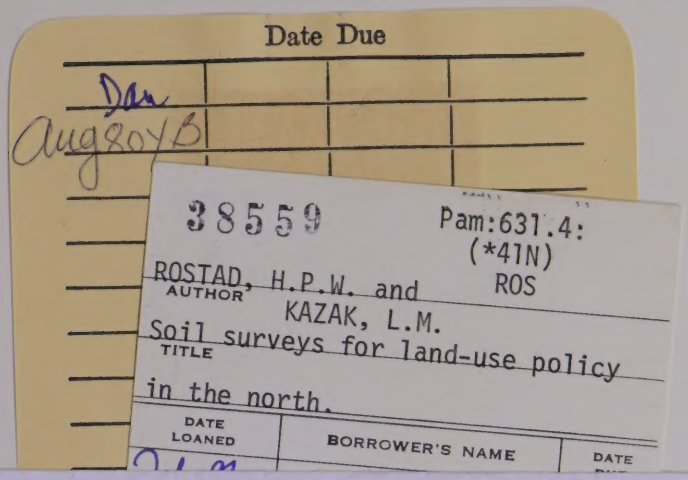
Figure 2. Map of the Yukon Territory showing the location of all surveyed areas.

cultural and native grazing capability of the soil areas, and the climatic and soil parameters that restrict agricultural development of the regions. A computer system of soil data management, the CanSIS system developed by the LRRI, was used to derive a series of 11 interpretive maps for each area. These maps, at a scale of 1:125,000 (1" = 2 miles), assisted the interpretation of the basic information on the soil map into information of prime concern for planning agricultural and associated development. Detailed soil and interpretive maps, at 1:16,000 (4" = 1 mile) were prepared around some of the urban areas.

The surveys in the Yukon reveal that most of the soils above the lower terraces of the major rivers are too cool to consistently mature cereal grains. They are deemed suitable, however, for the growth of forage crops and cool season vegetables. The better soils on the lower terraces and floodplains are generally considered suitable for cereal grains and market gardening. The surveys also delineate areas of land with sufficient native forages for grazing livestock. Soil analyses have identified nutrient deficiencies and potential problem areas. Of particular note are the acidic, potassium-deficient soils in the Pelly Crossing and Whitehorse areas. These latter areas have local, highly saline soil occurrences that could increase if cultivated.

Besides the major reports for the Yukon and Liard River areas, separate studies were undertaken to assess the agricultural potential of previously mapped areas along the Hay River, the Upper Mackenzie River – Fort Providence area, and the Slave River Lowlands in the N.W.T. (Fig. 1). These studies ensured that the same criteria for agricultural assessment were used throughout all significant areas with agricultural potential in this part of Northern Canada.

All indications suggest that the soil and climatic studies have and will be extremely useful to DINA in developing land policies and making land-use decisions in the north. Depending upon the extent and type of agricultural development and due to the broad reconnaissance nature of these surveys, more detailed work may be required to provide the information necessary for proper development of these areas. ■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